

Errors in Chemical Analysis (Ernest B. Sandell); Accuracy and Precision (W. J. Youden); Principles and Methods of Sampling (William W. Walton and James I. Hoffman); Elements and Compounds (James I. Watters); Atomic Weights (Edward Wichers); Chemical Equilibrium and the Thermodynamics of Reactions (T. S. Lee); Graphic Presentation of Equilibrium Data (Lars G. Sillen); Electrode Potentials (Roger G. Bates); Concept and Determination of pH (Roger G. Bates); Concepts of Acids and Bases (I. M. Kolthoff); Acid-Base Strength and Protolysis Curves in Water (Stanley Bruckenstein and I. M. Kolthoff); Acid-Base Equilibria in Nonaqueous Solutions (I. M. Kolthoff and Stanley Bruckenstein); Complexation Reactions (Anders Ringbom); Mechanisms of Oxidation-Reduction Reactions (Frederick R. Duke); Oxidation-Reduction Equilibria and Titration Curves (Frederick R. Duke); Solubility (D. L. Leussing); Precipitates: Their Formation, Properties, and Purity (Murrell L. Salutsky); Equilibria in Precipitation Reactions, and Precipitation Lines (J. F. Coetzee).

Most of these authors need no introduction to analytical chemists, and several of them are familiar as authors of previous monographs on their subjects. That they should write authoritatively on their topics is, therefore, no surprise. Those among these authors for whom this is the first venture in book writing have not only fully matched, but in several instances have excelled, the high standard set by their veteran colleagues. Perhaps it is unfair to single out a particular chapter, but I cannot refrain from remarking that I have never enjoyed reading a more lucid or more scholarly discussion than Professor Lee's treatment of Chemical Equilibrium and the Thermodynamics of Reactions.

Quite evidently much editorial skill and labor have been expended in weaving contributions from so many authors into whole cloth. The only editorial fault, which in my opinion is serious, is that literature references have been lumped together at the end of each chapter. Therefore, if one wants to use them he must page back and forth between the appended list and the text. In my opinion it is particularly important that in a reference book of this kind literature citations should be placed where they can be used most expeditiously, namely, as footnotes on each page.

There is no index to this volume, and presumably a general index ultimately, will be provided for each part.

The present volume deals mainly with subjects which already have been treated more or less adequately in existing specialized monographs, and the same probably will be true for the rest of Part I. The need for Part I is thus not nearly as urgent as for Parts II and III, and it is to be

hoped that the volumes of these parts will soon be forthcoming.

DEPARTMENT OF CHEMISTRY
HARVARD UNIVERSITY
CAMBRIDGE 38, MASS.

JAMES J. LINGANE

Electrolyte Solutions. The Measurement and Interpretation of Conductance, Chemical Potential and Diffusion in Solutions of Simple Electrolytes. Second Edition. By R. A. ROBINSON, D.Sc., Ph.D., F.R.I.C., Professor of Chemistry, University of Malaya, Singapore, and R. H. STOKES, Ph.D., D.Sc., F.A.A., F.R.A.C.I., F.R.I.C., Professor of Chemistry, University of New England, Armidale, New South Wales. Academic Press, Inc., 111 Fifth Avenue, New York 3, N. Y. 1959. xv + 559 pp. 14.5 × 22 cm. Price, \$11.50.

The main topics treated in the text are Conductance, Chemical Potential Viscosity and Diffusion in aqueous solutions of simple electrolytes. It is a disappointment to the reviewer that very little consideration is given to non-aqueous solutions. Although it is true that the data on non-aqueous solutions of electrolytes are less reliable and still somewhat fragmentary, progress in this field would be aided by the inclusion of this subject in any modern treatment of electrolytes. The book also suffers from the fact that some chapters are not brought up to date. For example, there is no mention of the contribution of Samoilov published in 1957 on the structure of water, nor the report of Ackerman published in the same year on the mobility of the hydrogen ions. The omission of recent references may be in part due to arrangements with the publishers as evidenced by the fact that the 1958 contribution to the theory of ion association had to be included briefly in an appendix. Chapter 14 and appendix 14.3 constitute a comprehensive treatment of ion association. The theoretical and practical treatment of the subject of diffusion appears to be dealt with more thoroughly than in the other books on aqueous solutions of electrolytes.

On the whole the authors have done well in presenting clearly the thermodynamics necessary for an understanding of the interactions of ions, and of ions with the solvent, in terms of chemical potentials.

The extensive tables of accurate experimental data and functions to aid in computations are useful with the possible exception of Table IV of Appendix 12.1. A comparison with the literature and Table V raises the question of the reliability of these data.

DEPARTMENT OF CHEMISTRY
ILLINOIS INSTITUTE OF TECHNOLOGY
CHICAGO, ILLINOIS
MARTIN KILPATRICK